Utah Department of Transportation
Traffic Operations Center

February 2012

Monthly Report

2060 South 2760 West Salt Lake City, Utah 84104 801-887-3710 www.CommuterLink.Utah.Gov

TOC Mission

- To Support UDOT and the Department of Public Safety in Improving Highway Safety.
- To Help Provide Reliable and Efficient Travel.
- To Provide Useful and Timely Real-time Traffic Information.
- To Work Together with Other Government Agencies to Serve the Public.
- To Provide Excellent Customer Service.

Field Devices Summary

Freeway PTZ Cameras	324	Freeway VMS	73
Surface Street PTZ Cameras	331	Surface Street VMS	52
RWIS & Contracted Weather Cameras	148	Portable TOC VMS	6
Viewable Detection Cameras	102	Legacy Trucks Prohibited VMS	21
Total Cameras	905	Total VMS	152
HAR (23 permanent/5 portable)	28	TMS	463
RWIS	74	Traffic Signals Connected to i2TMS	1401
Connected Ramp Meters	55		

Operations Summary

VMS Messages Displayed (incl. Travel Time)	331,551	IMT Assists	1648
Signal Timing Work Orders	25	Website Visitor Sessions	628,936
R2 Signal Maintenance Work Orders	73	511 Calls	44,448
All New Work Orders	243	Weather Desk Calls	769
Incident Responses by the TOC	600	Ask CommuterLink Questions	45
Incident Duration Average Minutes	67		

Operation Highlights

Control Room provided information support for Park City through use of VMS, 511, and web alerts. Events such as the Freestyle World Cup draw large crowds and the planned special event messaging the control room provides helps to reduce congestion and provide valuable parking and event information.

The control room also provided great support for avalanche work being completed in Little Cottonwood Canyon. In addition to standard methods of messaging, two portable VMS were deployed in the canyon.

Traveler Information participated in Air Quality messaging discussion with Wasatch Front Regional Council, represented the TOC at the Little Cottonwood Canyon operations meeting, and presented to the Utah Freight Commission regarding UDOT's traveler information services.

Traffic Signal Operations hired Adam Lough as the new Region 3 & 4 Signal Engineer. Adam Lough comes to us from Orem City, and has 10 years of experience working with traffic signals. Adam will reside at Region 3, and will supervise the Region 3 and Region 4 traffic signal crews. In addition to signal maintenance, Adam will also work directly with the Traffic Management Division, Regions 3 & 4, local municipalities, and other stakeholders to manage traffic signal timing and coordination, ensuring traffic signal operations in Regions 3 & 4 are world-class. Please join us in welcoming Adam to UDOT.

New signal coordination plans are currently being developed for Bangerter Highway between 7800 South and California Ave; 12300 South between 700 West and 700 East; 2600 South in Bountiful between I-15 and 500 West; and along Redwood Road in Saratoga Springs.

Travel Mobility has created has created new Freeway Travel Time routes in the Wasatch Front, updating the method freeway travel time will be collected and analyzed in the future. The TOC has been measuring travel times manually for several years, but PeMS (Performance Measurement System) will provide automated measurement, more sampled data, and be able to provide travel time information on an as-needed basis. The new system will be evaluated against the manually gathered data for a few months to compare the new and old data gathering methods.

ITS Asset Management -
Twelve signals were connected to the signal control program, five CCTV's and four TMS were integrated and added to the ATMS system this past month.

ATMS Maintenance -

The Field and Lab teams worked with TransCore to resolve problems at the 2100 S at 600 W Highway Advisory Radio site, which is one of the new HAR transmitter sites. The transmitter failure was caused by a manufacturing problem, but several site problems were found while troubleshooting. The antenna connector had separated from the cable, ground plane resistance was high, and the power supply had failed. These problems will be corrected prior to installing a new transmitter.

The Field Team finished helping TxDOT setting up their first Redline ethernet radios, which are now working great. They also replaced 500 feet of failed power circuit wiring at 1300 E and I-215 on I-80. This repairs two CCTV sites. The field team went to St. George to repair a few ATMS problems and perform preventative maintenance on 22 cabinets, 2 VMS and the HAR site in the area. Three newly installed VMS, CCTVs and HARs along I-15 were inspected and a construction punch list prepared as they drove to St. George. They upgraded the LED modules in two VMS signs, leaving only two more signs needing to be upgraded from the 15 degree LEDs to the new 30 degree units. They worked with ITS to troubleshoot and replace the firewall modems in Cedar City and the Provo Canyon maintenance shed.

Operation Highlights

ATMS Maintenance cont.

The Fiber Team Repaired ten junction boxes, held over a dozen field meetings with project fiber subcontractors and the fiber maintenance/repair contractor. Preventative Maintenance was performed on seven Communication Hubs, as well as verifying fiber assignments and counts. Fiber was tested and repaired at eight locations, and three projects were tested.

The Lab Team tested and repaired forty-four ATMS devices. The Lab Team resumed testing and repair for cameras this past month, which will be a big savings to the ATMS Maintenance budget. Preventative Maintenance was performed on two portable HARs. The team upgraded two TMS sites with equipment upgrades, and began testing a new non-intrusive traffic detector that is capable of sensing up to twenty-two lanes.

The Lab Team continued to work with Salt Lake County to resolve traffic signal problems at 7000 S at 2700 W. They are dealing with a defective radio, and fiber disruptions caused by ongoing construction on Bangerter Highway.

Region 1

SR 193 Extension:

Have had project identification meeting and will work with Region 1 design to include ATMS. Identified need for fiber along route and drops to five signals and two CCTV cameras. We are awaiting advertisement.

I-15; SR126 to US-91:

This project has been advertised and awarded to Flatiron construction. This project is near completion.

I-15; I-84 interchange to SR-30:

This project has been awarded to Multiple Concrete Enterprises Inc. This project is near completion. The ATMS contractor has installed a single ground mounted HVAC unit that now has to be replaced by two wall mount HVAC units. Mitigation of punch list items is ongoing.

I-15; SR-30 to the Idaho State line:

This project is being designed by PineTop Engineering and is ready to advertise.

Logan City Main Street Integration:

This project was advertised, however, was 10 % over the engineers estimate and had to have approximately $35,000 infused to award. This project has been awarded to SCI.

ITS Deployment Highlights

Region 2

SR-154; Bangerter Highway 5400 South to 9000 South Fiber
This project includes upgrading the fiber optic cable and conduit on Bangerter Highway to a consistent 72 strand cable and 1-D conduit system between 5400 South and 9000 South. This project is currently under construction in coordination with the 6200 South, 7000 South, and 7800 South design-build project.

13400 South; 4000 West to Mountain View Corridor
This is a Riverton City project that will widen 13400 South to seven lanes between Bangerter Highway and Mountain View Corridor. This project will also include a 72 strand fiber-optic cable to connect backbone lines on Bangerter and Mountain View Corridor and interconnect for 2 traffic signals on 13400 South. Construction on this project has begun.

SR-89 (State Street) 8000 South to 6400 South
This project includes roadway widening and reconstruction from 8000 South to 6400 South. 2D conduit will be installed in the reconstruction area from 8000 South to 6400 South and 48 strand fiber will be installed between splice points at 9000 South and 6400 south. Construction on this project has begun. No ATMS devices have been installed to-date.

Region 3

-SR-73; Redwood Rd to Ranches - Generated a plan to install fiber optic cable in the existing conduit, and adding CCTV's at 800 West and also at Ranches intersections. Need to resolve about 1900 Ft of damaged conduit before proceeding.

-2100 North Lehi (MVC) – Fiber optic cable installed and operational. Began 30 day burn-in on CCTV's

Univ Pkwy; US-89 to 800 East – Upgraded the project's fiber optic cable count to 144 strands.

Region 4

St. George:
Design work for the River Road and Telegraph connection has been completed. Hidden Peak Electric has won the bid.

VMS at I-70 & I-15:
The Quest issue has been resolved. There still needs to have some minor integration and removal of CDMA's is still required. Wire theft issues are being mitigated.

VMS on I-15 from Scipio to St. George:
The advertisement has been awarded to Black & McDonald DBA Custom Lighting SE for $899,763.41. Pre-construction has taken place and construction has been completed. Integration is ongoing.

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ITS Standards and Specifications:

Revisions to AT 09 and 13561 in order to specify "non blade type" power shut off switches were brought to discussion.

Procurement:

One vendor qualified to provide fiber optic cable and accessories, a contract will be issued.
The RFI for H.A.R. failed to produce desired results.
Discussions on the best method to purchase ATMS/RWIS trailers were held.

Consultant Contracting:

Mike processed On Call Task Order requests for the TOC Project Managers.
Consultant contracting processes that include WTOs, renewals, and progress payments continued.

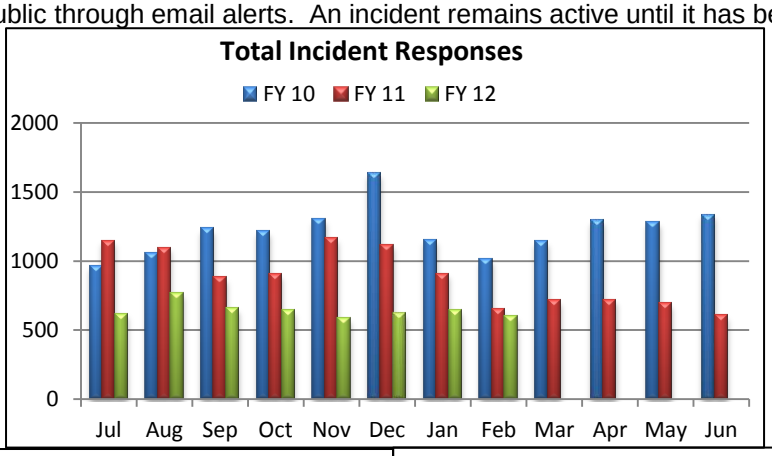
Visited the 13400 South, widening project site to observe line and placement of 1D conduit.

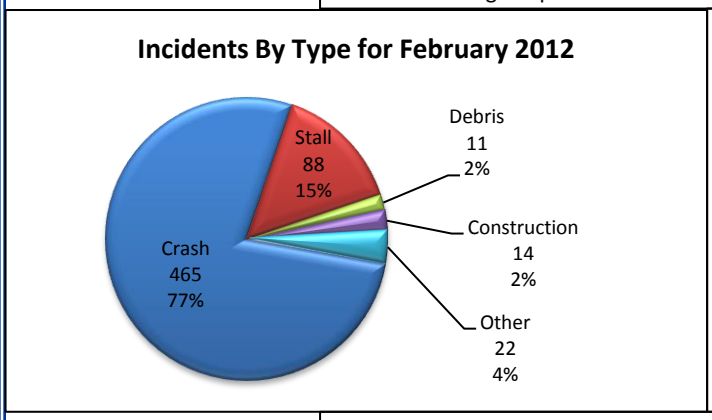
Visited the Little Cottonwood Canyon, 4 wheel drive or chains required, signs to look at the antenna set ups for possible improvements.

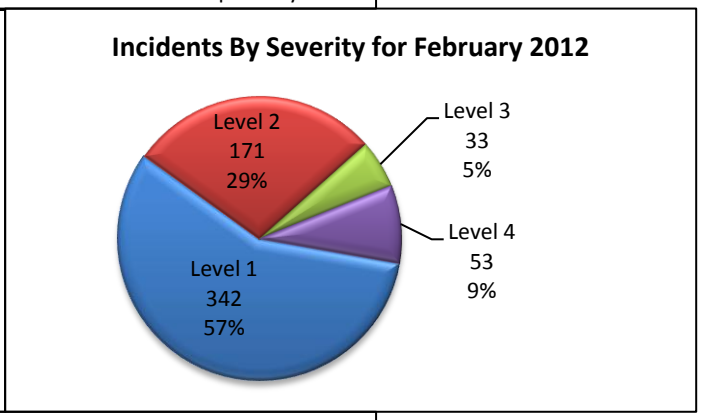
Acronyms

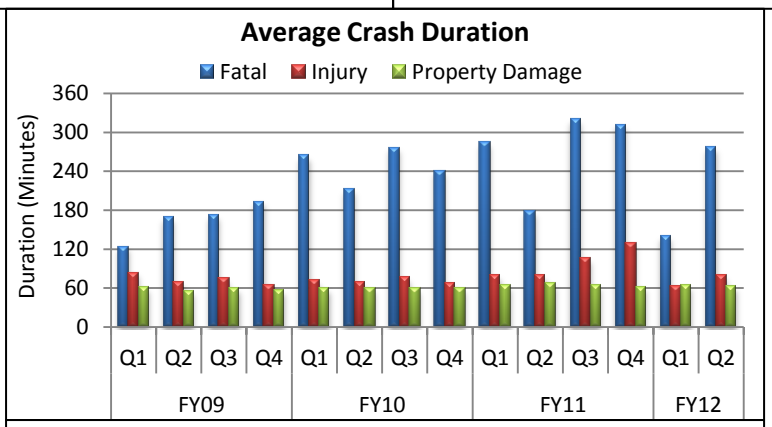
CCTV	Closed Circuit Television	I2TMS	Integrated Interagency Traffic Management System
RWIS	Road-Weather Information System	TOC	Traffic Operations Center
DPS	Department of Public Safety	VMS	Variable Message Sign
TMS	Traffic Monitoring Station	ITS	Intelligent Transportation System
HAR	Highway Advisory Radio	TMD	Traffic Management Division

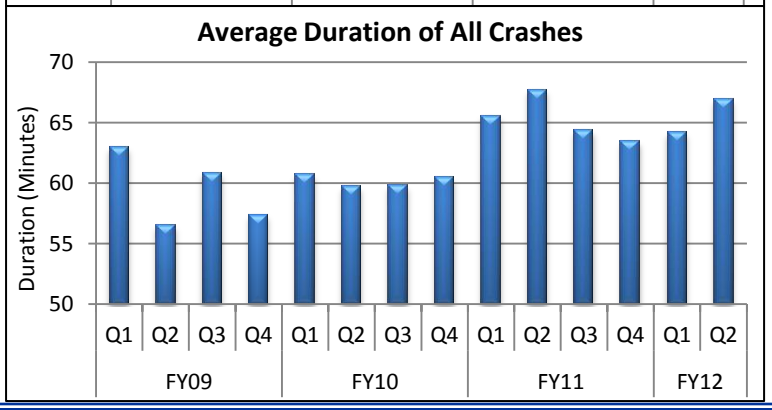
An incident response occurs each time an incident is recorded in the ATMS system. These can be of several types, including crash, construction, debris, stall, congestion, or other. Crashes are separated into three subcategories: property damage, personal injury, and fatal. Each time an incident is created, information is sent to the 511 system, the website, and to the public through email alerts. An incident remains active until it has been completely cleared from the roadway.

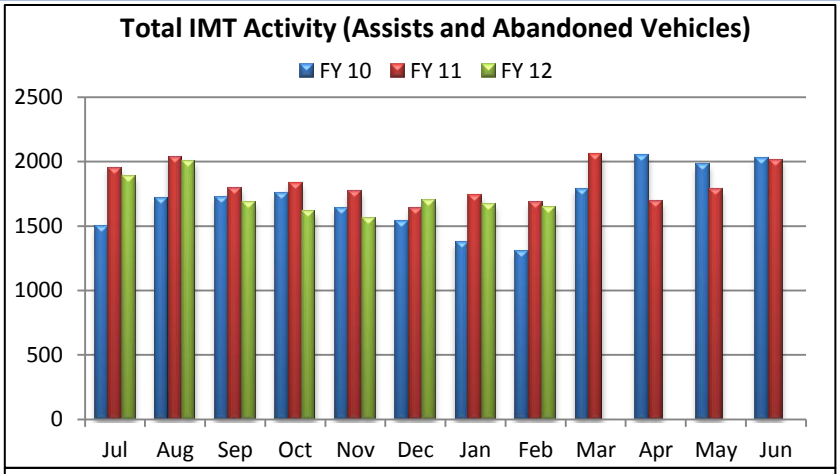


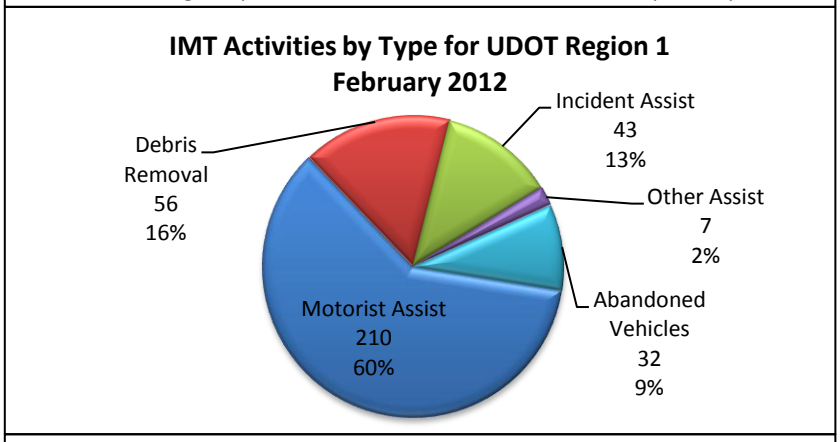


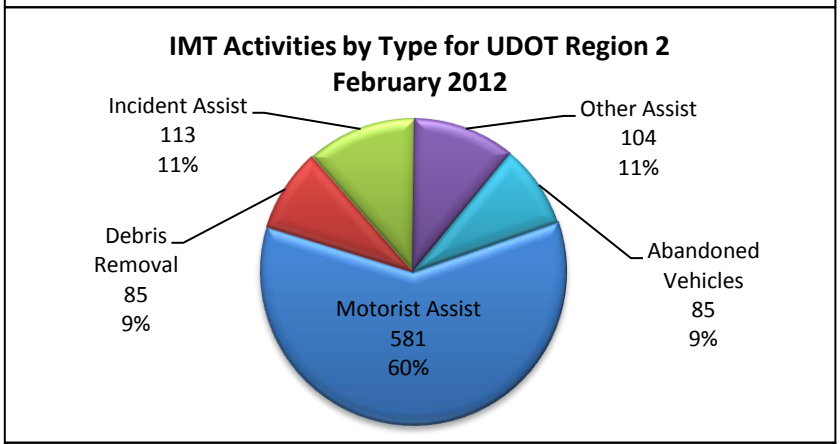


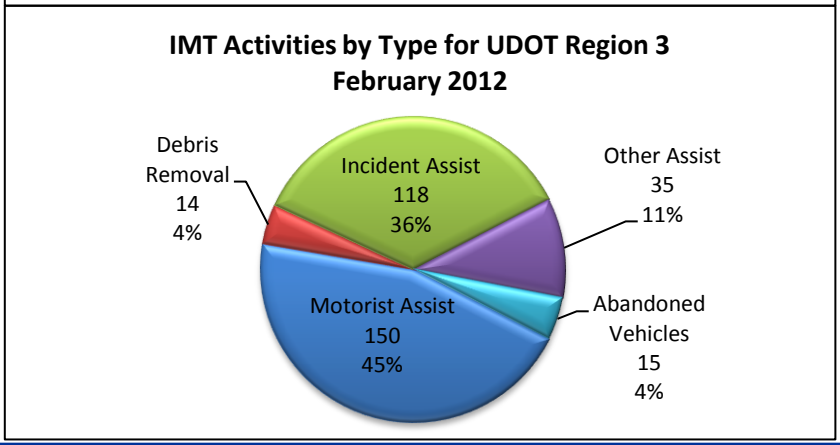





Total IMT Activity (Assists and Abandoned Vehicles)
FY 10
FY 11
FY 12
2500
2000
1500
1000
500
0
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun


IMT Activities by Type for UDOT Region 1
February 2012
Incident Assist
43
13%
Other Assist
7
2%
Abandoned
Vehicles
32
9%
Motorist Assist
210
60%
Debris
Removal
56
16%


IMT Activities by Type for UDOT Region 2
February 2012
Incident Assist
113
11%
Other Assist
104
11%
Abandoned
Vehicles
85
9%
Motorist Assist
581
60%
Debris
Removal
85
9%


IMT Activities by Type for UDOT Region 3
February 2012
Debris
Removal
14
4%
Incident Assist
118
36%
Other Assist
35
11%
Abandoned
Vehicles
15
4%
Motorist Assist
150
45%

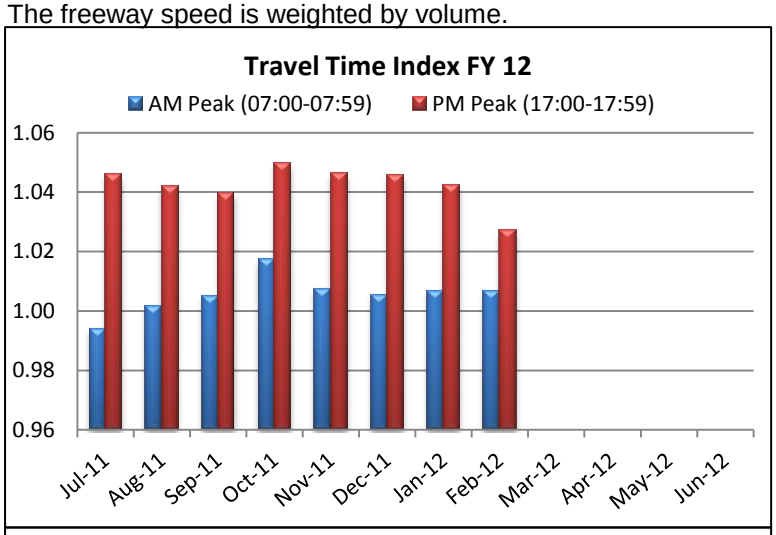
Freeway Traffic Level of Service

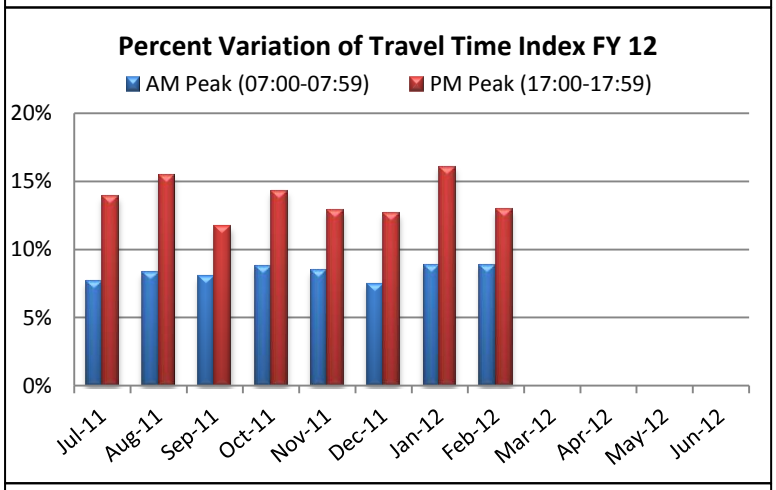
Freeway flow measures are taken from the Traffic Monitoring Stations (TMS) located throughout the Wasatch Front. As more TMS sites are installed throughout the state, they will be included in these performance measures.

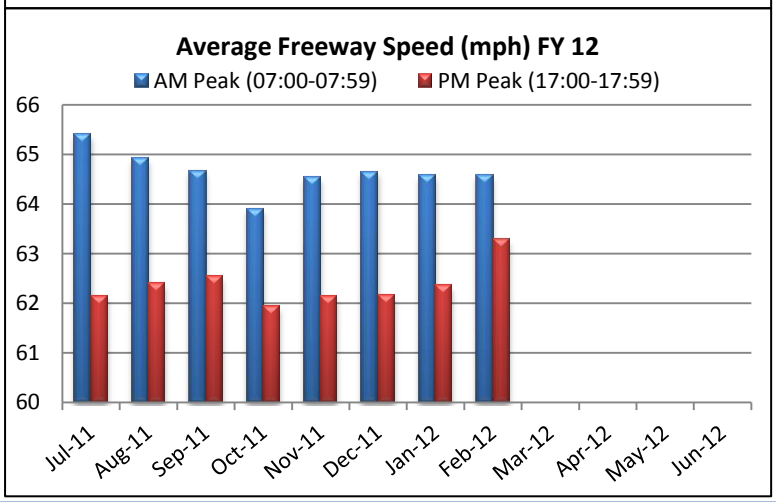
Travel Time Index: This measure of mobility is based on freeway speeds and is weighted by segment lengths and by the traffic volume. A value of 1.0 represents free-flow speeds. A value of 1.12 indicates that the average vehicle trip takes 12% longer than if that were the only vehicle on the freeway.

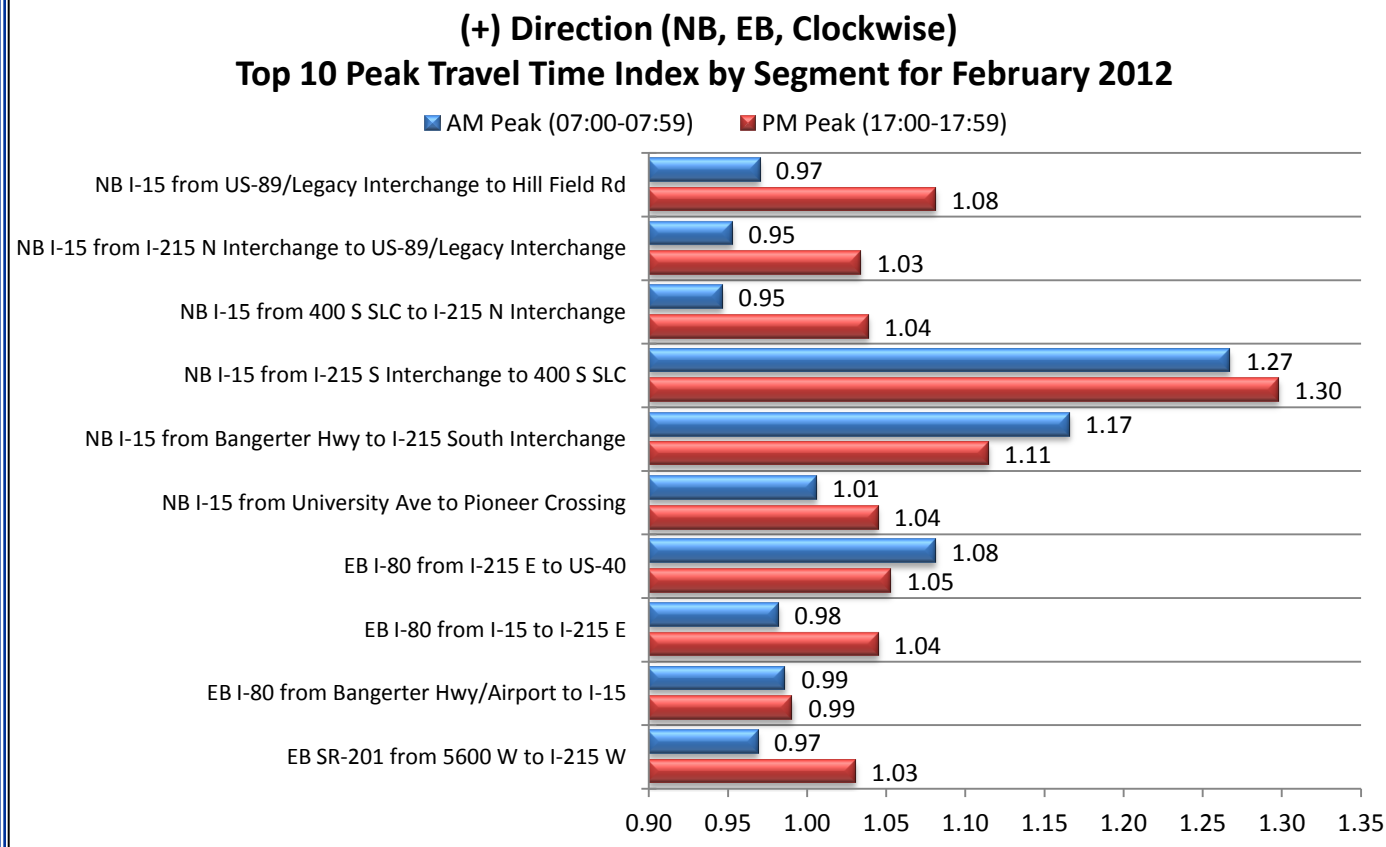
Percent Variation of Travel Time Index: The percent variation in the Travel Time Index is a measure of how much the Travel Time Index changes from day-to-day.

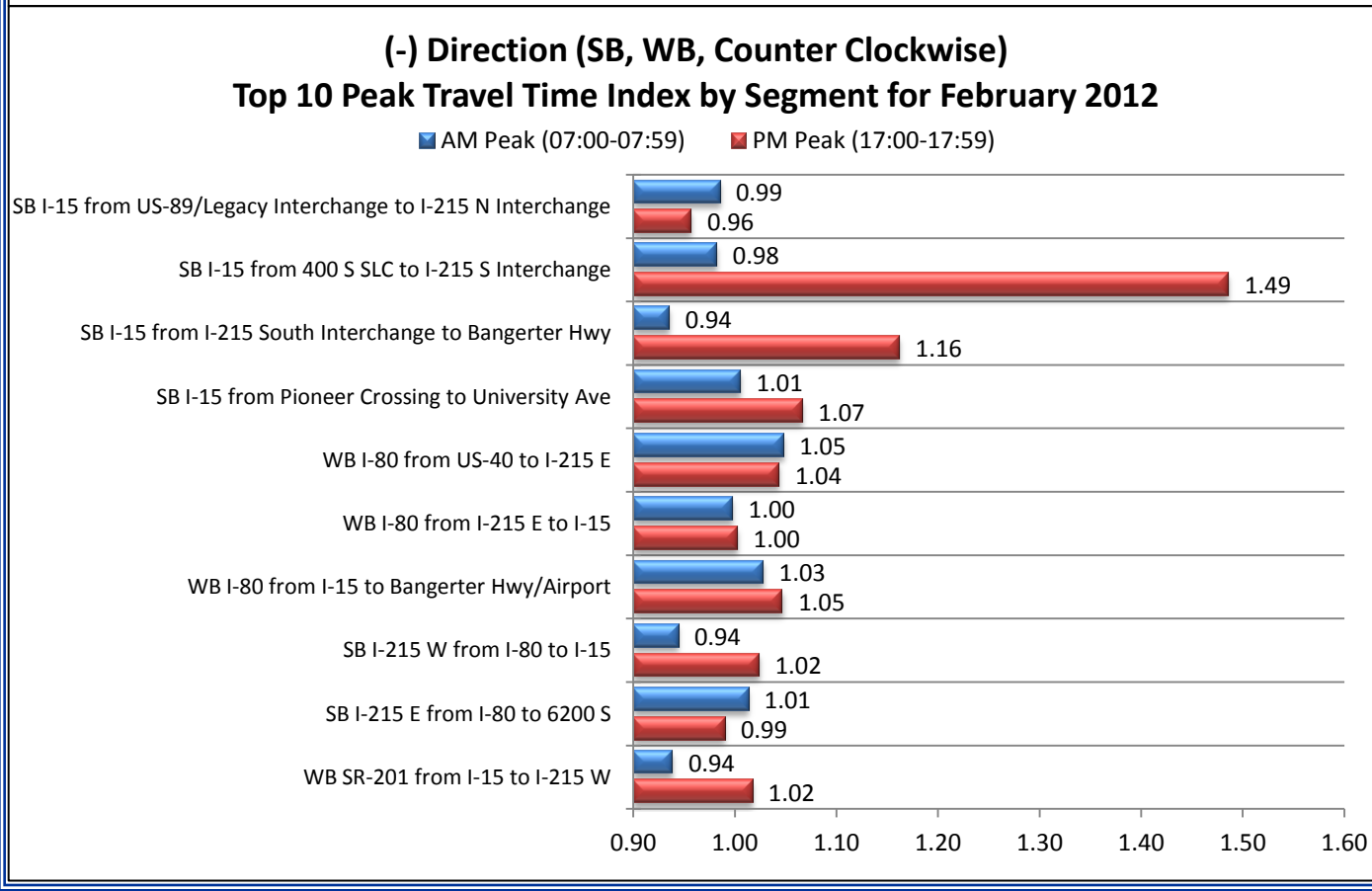
Average Freeway Speed: The freeway speed is weighted by volume.

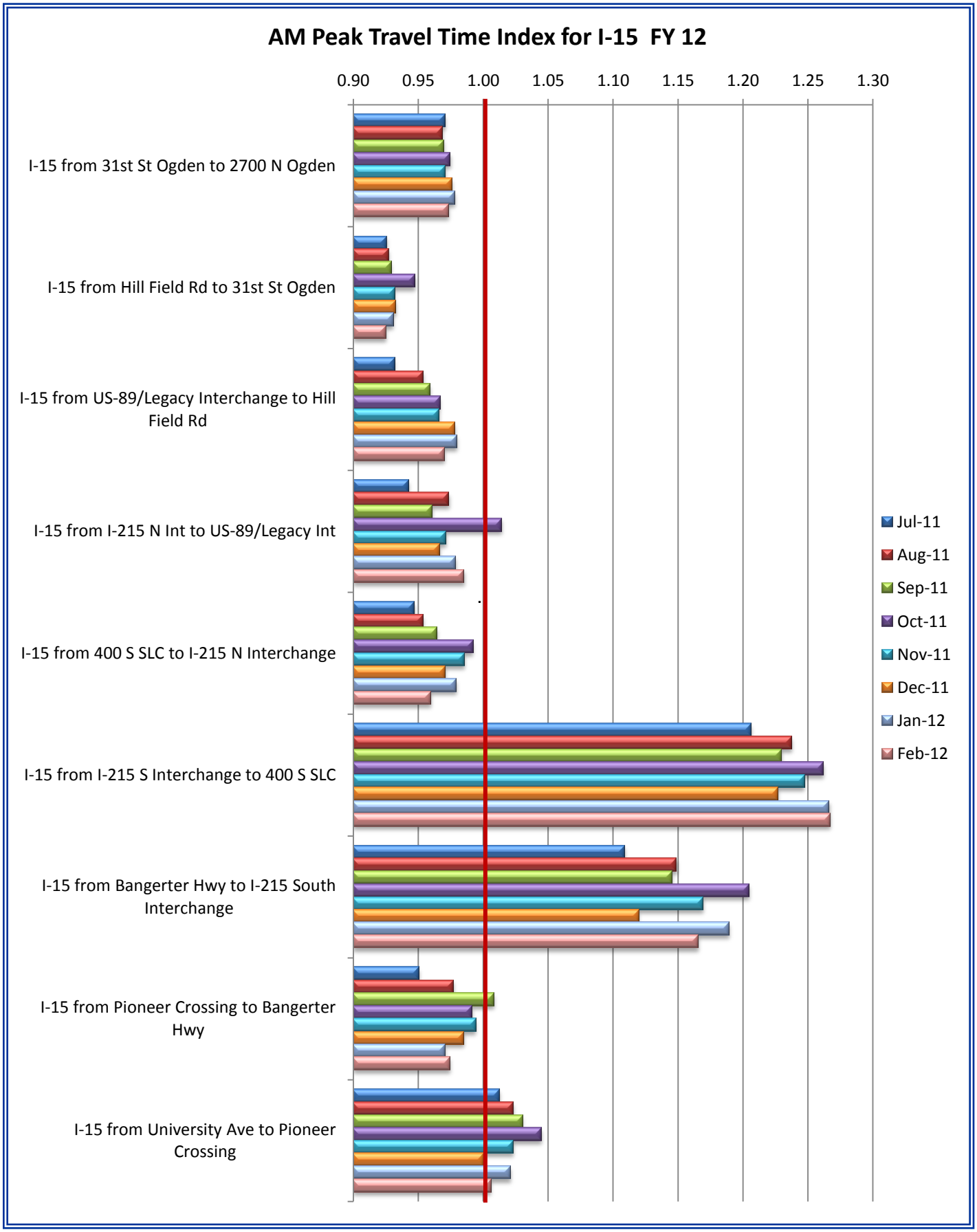


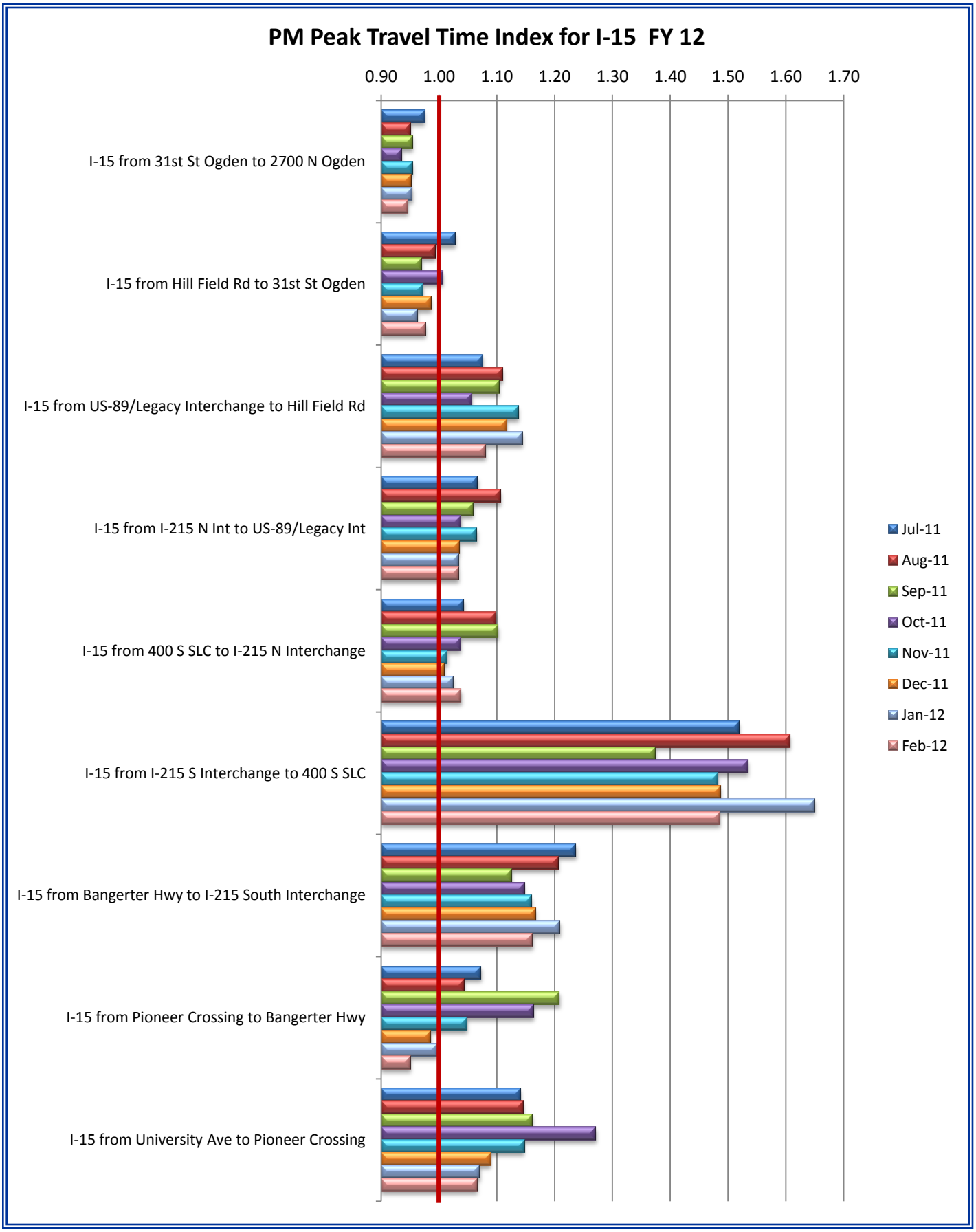


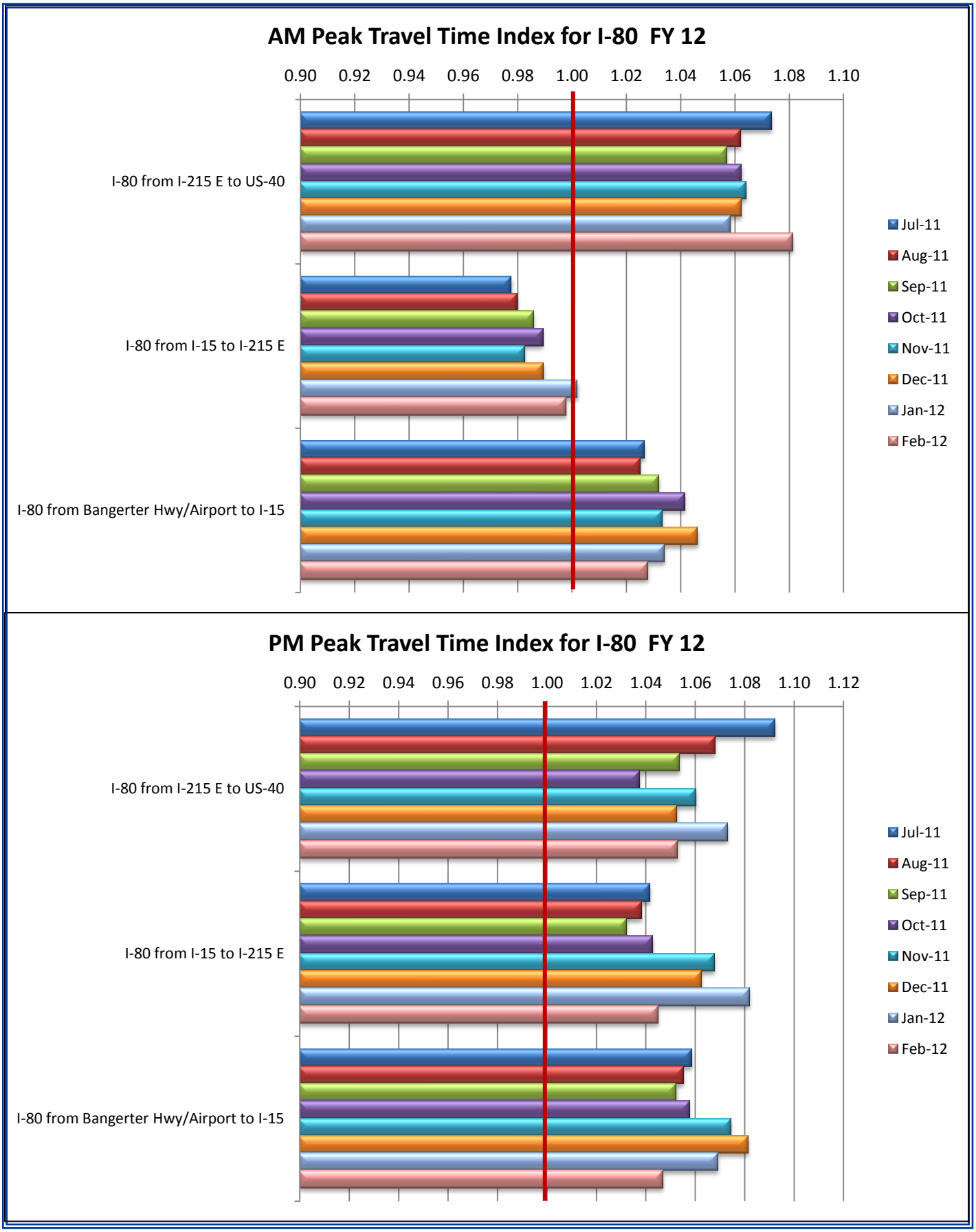


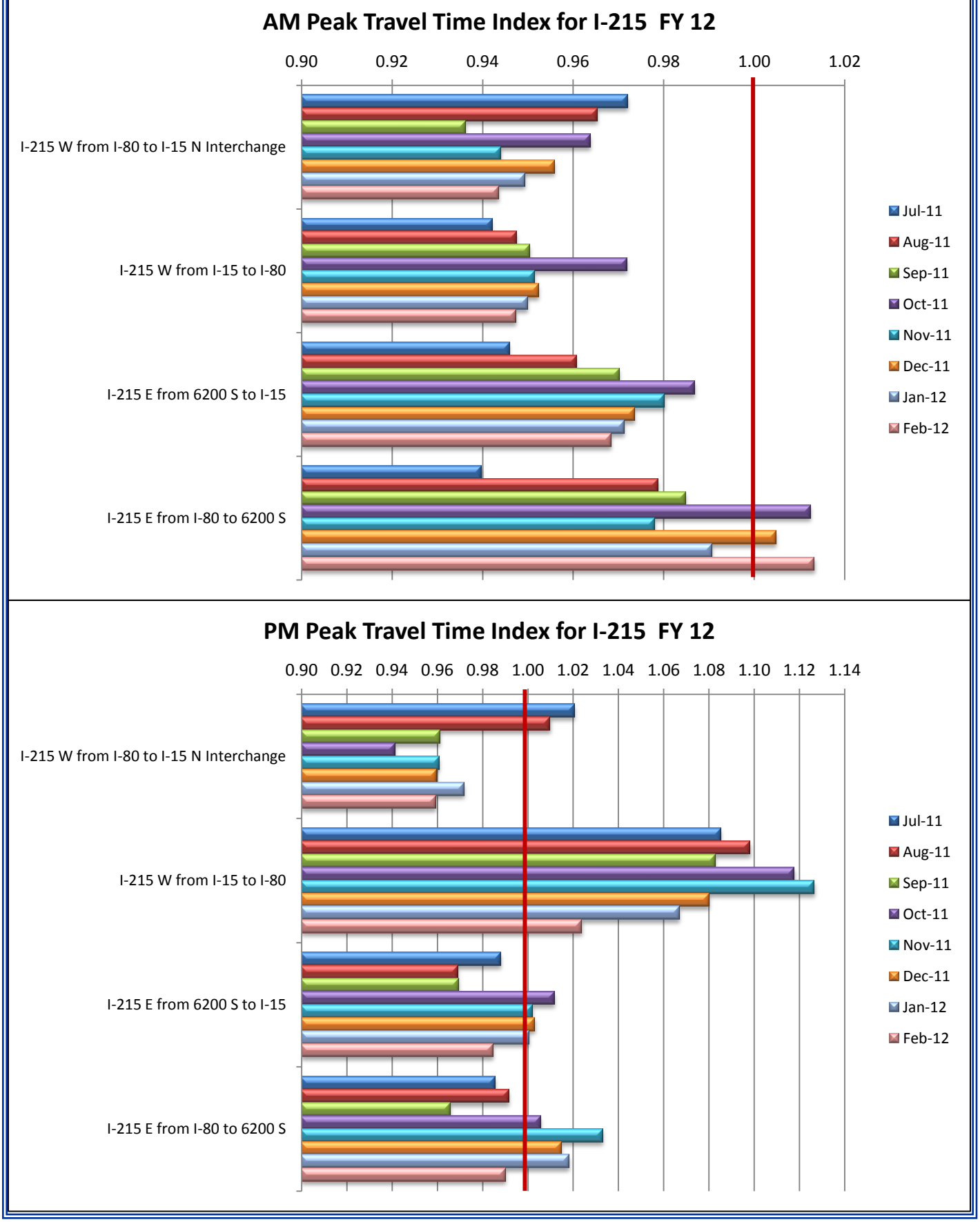

(+) Direction (NB, EB, Clockwise)
Top 10 Peak Travel Time Index by Segment for February 2012
AM Peak (07:00-07:59)
PM Peak (17:00-17:59)
NB I-15 from US-89/Legacy Interchange to Hill Field Rd
0.97
1.08
NB I-15 from I-215 N Interchange to US-89/Legacy Interchange
0.95
1.03
NB I-15 from 400 S SLC to I-215 N Interchange
0.95
1.04
NB I-15 from I-215 S Interchange to 400 S SLC
1.27
1.30
NB I-15 from Bangerter Hwy to I-215 South Interchange
1.17
1.11
NB I-15 from University Ave to Pioneer Crossing
1.01
1.04
EB I-80 from I-215 E to US-40
1.08
1.05
EB I-80 from I-15 to I-215 E
0.98
1.04
EB I-80 from Bangerter Hwy/Airport to I-15
0.99
0.99
EB SR-201 from 5600 W to I-215 W
0.97
1.03
0.90 0.95 1.00 1.05 1.10 1.15 1.20 1.25 1.30 1.35

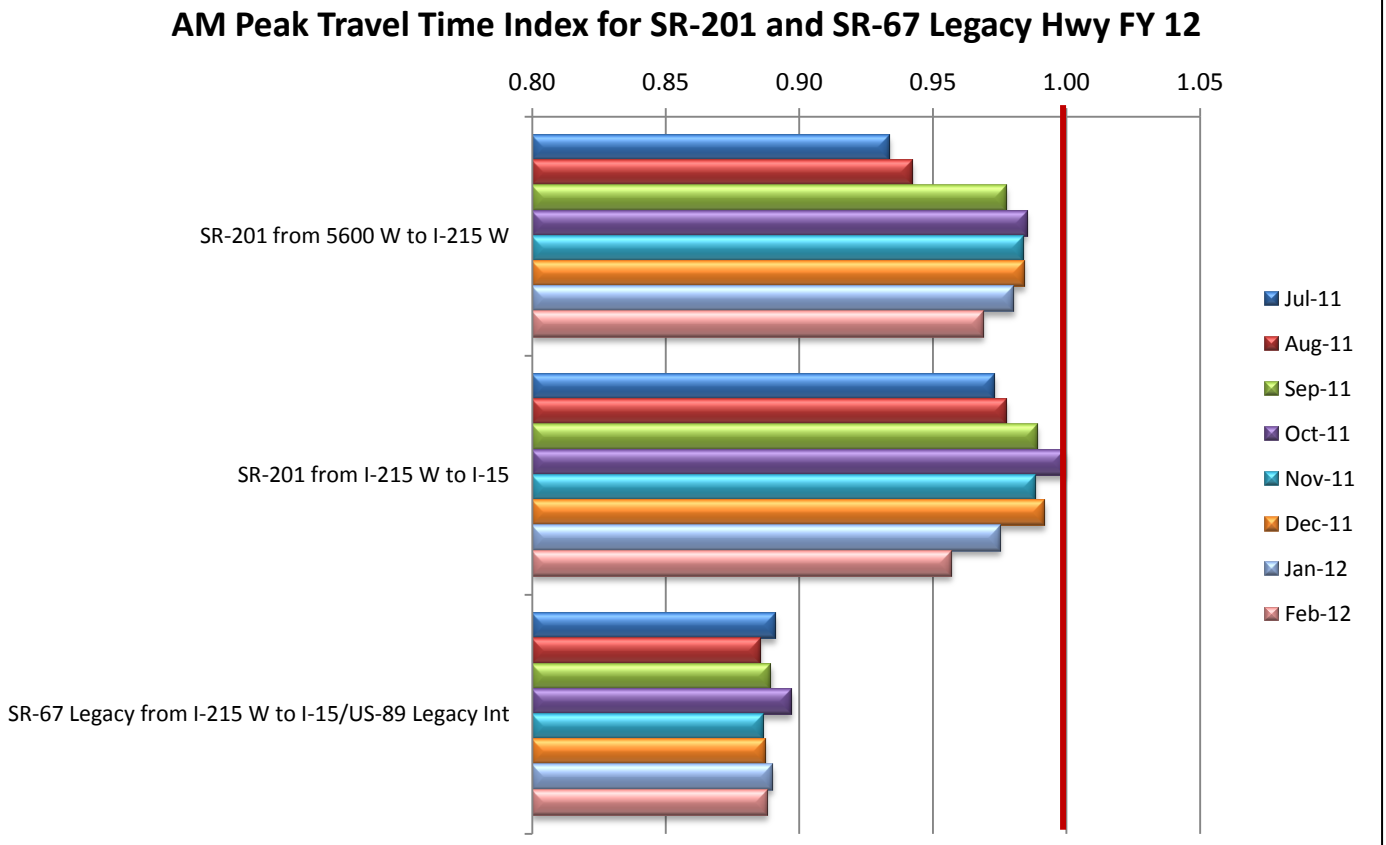

(-) Direction (SB, WB, Counter Clockwise)
Top 10 Peak Travel Time Index by Segment for February 2012
AM Peak (07:00-07:59)
PM Peak (17:00-17:59)
SB I-15 from US-89/Legacy Interchange to I-215 N Interchange
0.99
0.96
SB I-15 from 400 S SLC to I-215 S Interchange
0.98
1.49
SB I-15 from I-215 South Interchange to Bangerter Hwy
0.94
1.16
SB I-15 from Pioneer Crossing to University Ave
1.01
1.07
WB I-80 from US-40 to I-215 E
1.05
1.04
WB I-80 from I-215 E to I-15
1.00
1.00
WB I-80 from I-15 to Bangerter Hwy/Airport
1.03
1.05
SB I-215 W from I-80 to I-15
0.94
1.02
SB I-215 E from I-80 to 6200 S
1.01
0.99
WB SR-201 from I-15 to I-215 W
0.94
1.02
0.90 1.00 1.10 1.20 1.30 1.40 1.50 1.60

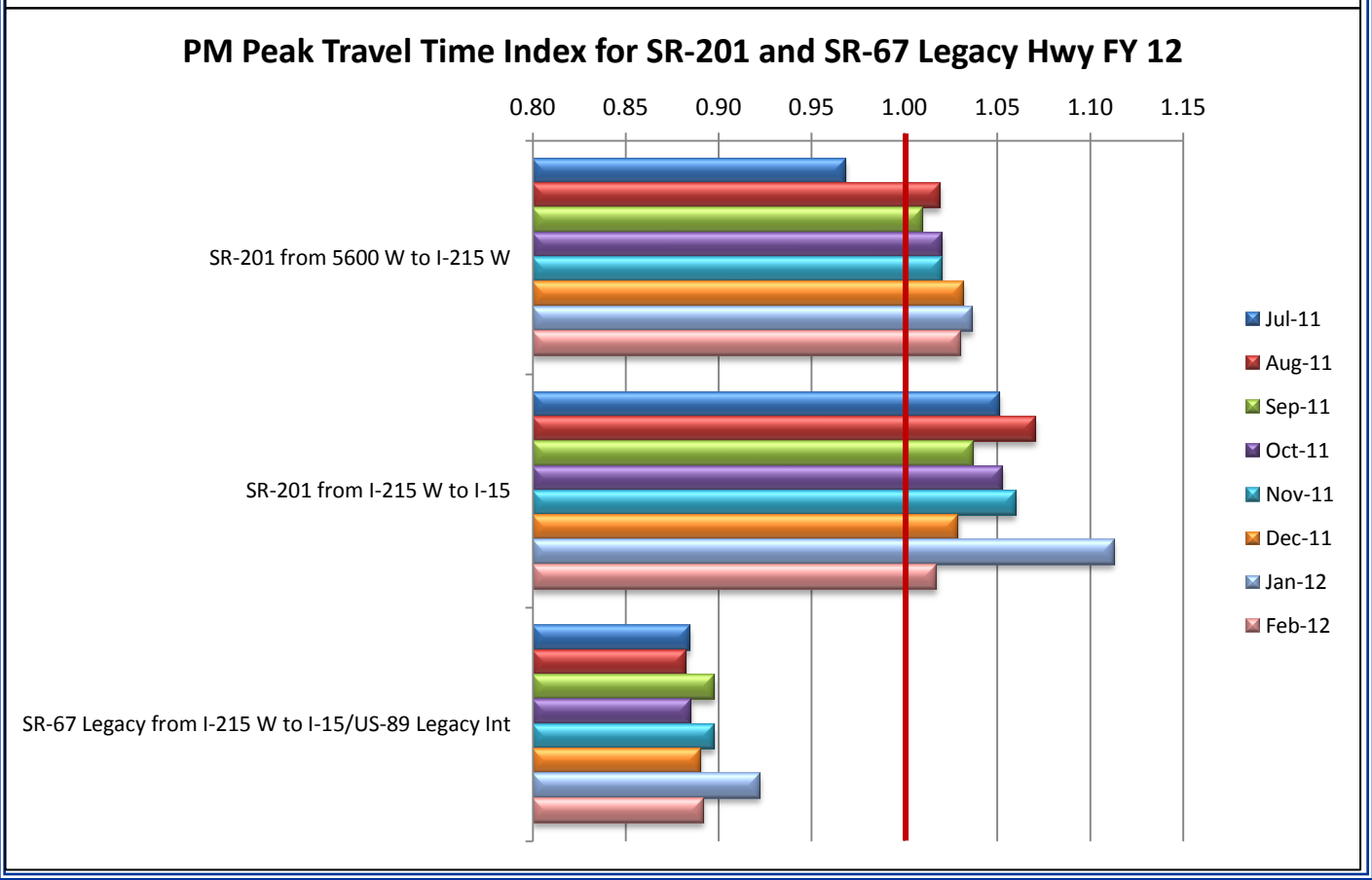

AM Peak Travel Time Index for I-15 FY 12
0.90
0.95
1.00
1.05
1.10
1.15
1.20
1.25
1.30
I-15 from 31st St Ogden to 2700 N Ogden
I-15 from Hill Field Rd to 31st St Ogden
I-15 from US-89/Legacy Interchange to Hill Field Rd
I-15 from I-215 N Int to US-89/Legacy Int
I-15 from 400 S SLC to I-215 N Interchange
I-15 from I-215 S Interchange to 400 S SLC
I-15 from Bangerter Hwy to I-215 South Interchange
I-15 from Pioneer Crossing to Bangerter Hwy
I-15 from University Ave to Pioneer Crossing
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Jan-12
Feb-12


PM Peak Travel Time Index for I-15 FY 12
0.90
1.00
1.10
1.20
1.30
1.40
1.50
1.60
1.70
I-15 from 31st St Ogden to 2700 N Ogden
I-15 from Hill Field Rd to 31st St Ogden
I-15 from US-89/Legacy Interchange to Hill Field Rd
I-15 from I-215 N Int to US-89/Legacy Int
I-15 from 400 S SLC to I-215 N Interchange
I-15 from I-215 S Interchange to 400 S SLC
I-15 from Bangerter Hwy to I-215 South Interchange
I-15 from Pioneer Crossing to Bangerter Hwy
I-15 from University Ave to Pioneer Crossing
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Jan-12
Feb-12


AM Peak Travel Time Index for I-80 FY 12
0.90
0.92
0.94
0.96
0.98
1.00
1.02
1.04
1.06
1.08
1.10
I-80 from I-215 E to US-40
I-80 from I-15 to I-215 E
I-80 from Bangerter Hwy/Airport to I-15
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Jan-12
Feb-12
PM Peak Travel Time Index for I-80 FY 12
0.90
0.92
0.94
0.96
0.98
1.00
1.02
1.04
1.06
1.08
1.10
1.12
I-80 from I-215 E to US-40
I-80 from I-15 to I-215 E
I-80 from Bangerter Hwy/Airport to I-15
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Jan-12
Feb-12


AM Peak Travel Time Index for I-215 FY 12
0.90
0.92
0.94
0.96
0.98
1.00
1.02
I-215 W from I-80 to I-15 N Interchange
I-215 W from I-15 to I-80
I-215 E from 6200 S to I-15
I-215 E from I-80 to 6200 S
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Jan-12
Feb-12
PM Peak Travel Time Index for I-215 FY 12
0.90
0.92
0.94
0.96
0.98
1.00
1.02
1.04
1.06
1.08
1.10
1.12
1.14
I-215 W from I-80 to I-15 N Interchange
I-215 W from I-15 to I-80
I-215 E from 6200 S to I-15
I-215 E from I-80 to 6200 S
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Jan-12
Feb-12

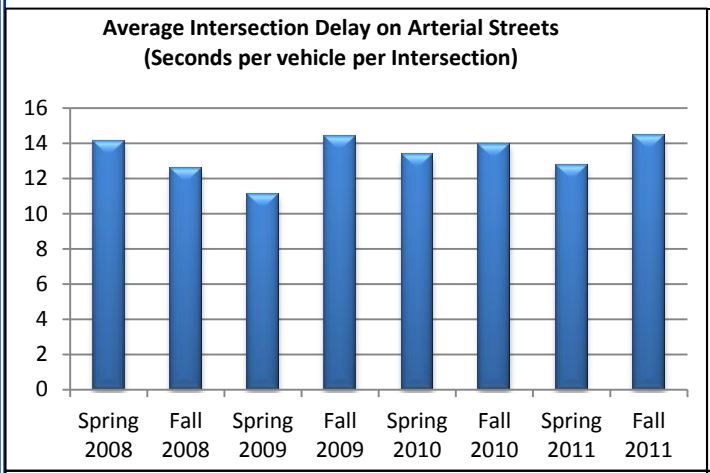

AM Peak Travel Time Index for SR-201 and SR-67 Legacy Hwy FY 12
0.80
0.85
0.90
0.95
1.00
1.05
SR-201 from 5600 W to I-215 W
SR-201 from I-215 W to I-15
SR-67 Legacy from I-215 W to I-15/US-89 Legacy Int
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Jan-12
Feb-12

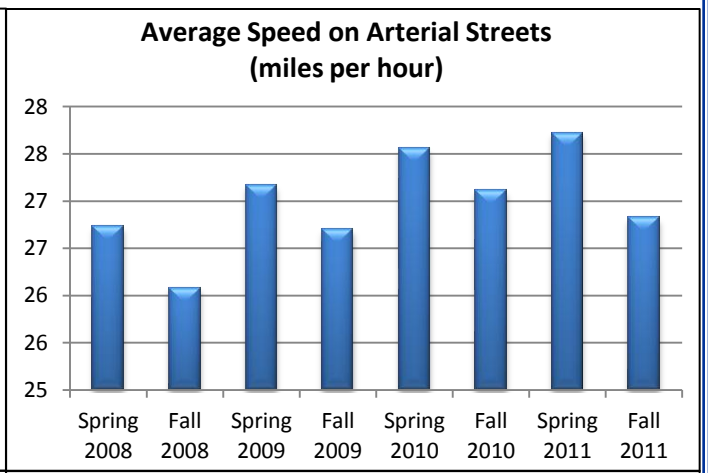

PM Peak Travel Time Index for SR-201 and SR-67 Legacy Hwy FY 12
0.80
0.85
0.90
0.95
1.00
1.05
1.10
1.15
SR-201 from 5600 W to I-215 W
SR-201 from I-215 W to I-15
SR-67 Legacy from I-215 W to I-15/US-89 Legacy Int
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Dec-11
Jan-12
Feb-12

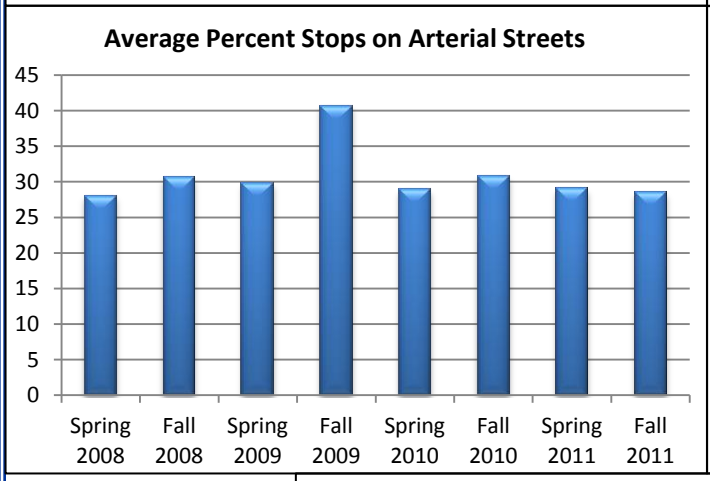
Surface Street Traffic Level of Service

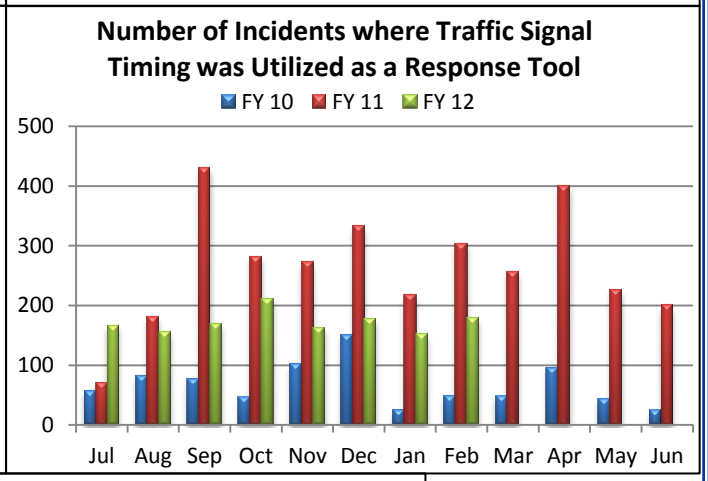
The surface street traffic statistics are generated through a series of Travel Time measurements. These are conducted using a special equipped vehicle which measures the average travel time, the average percent of intersections at which a vehicle must stop, the average time stopped at an intersection, and the average speed. The Traffic Systems Section gathers these measurements from Regions 1, 2, 3, and 4 twice each year. The chart in the lower right hand corner shows the number of incidents where traffic signal timing was modified in order to help traffic flow around closed lanes, or to help relieve excessive congestion.

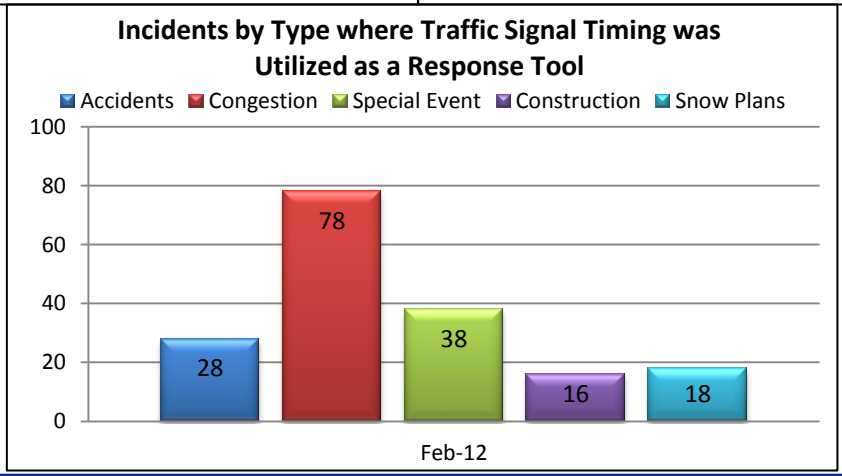
The following charts illustrate data gathered during semi-annual timing runs.

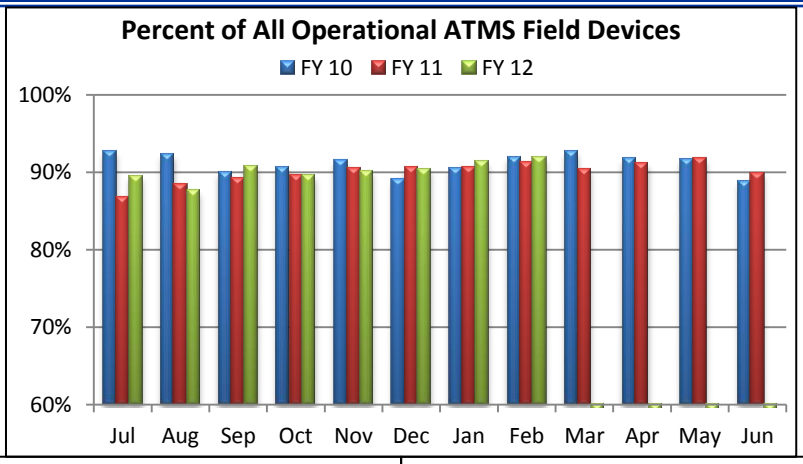


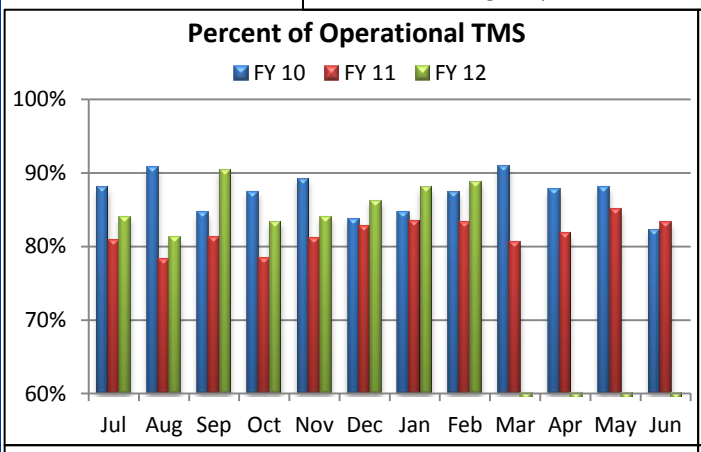


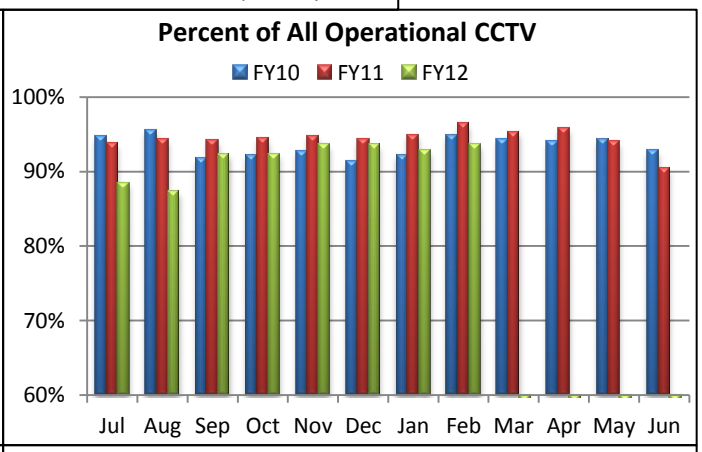


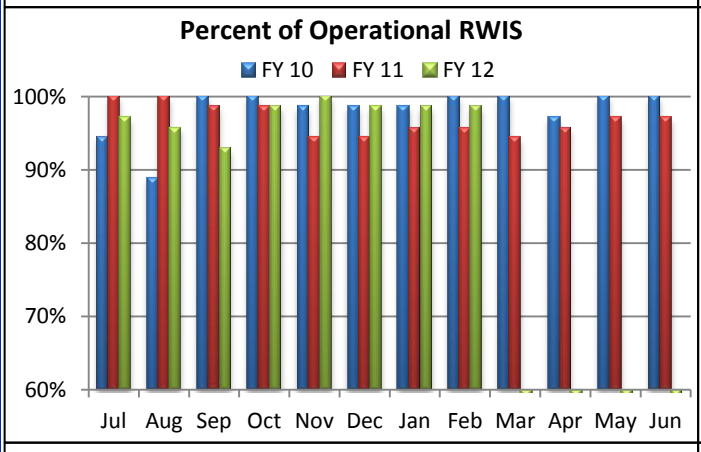


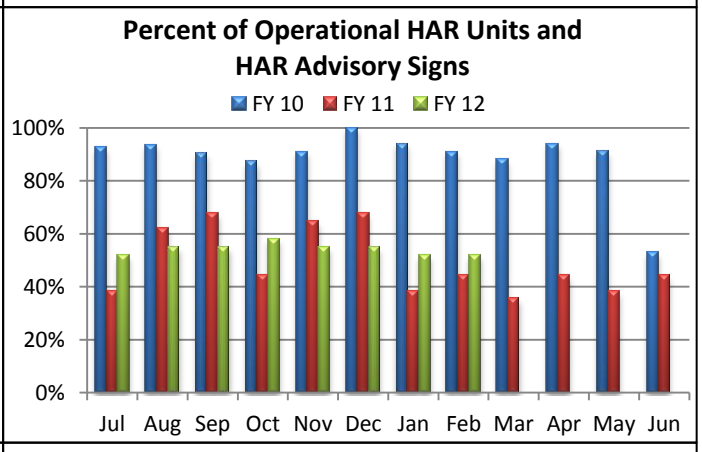


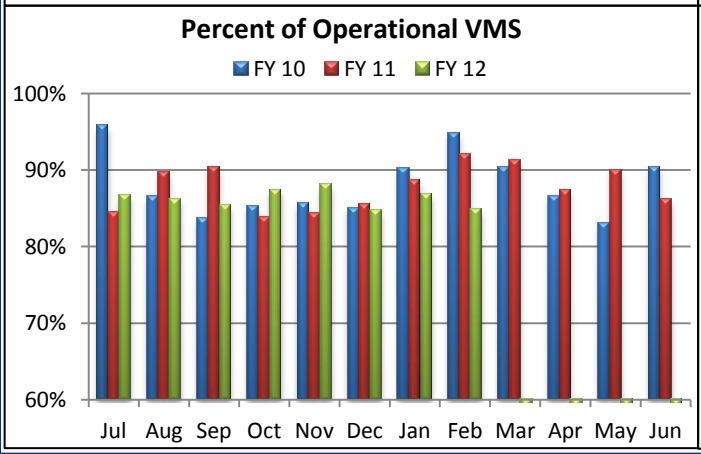

Percent of All Operational ATMS Field Devices
FY 10
FY 11
FY 12
100%
90%
80%
70%
60%
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun

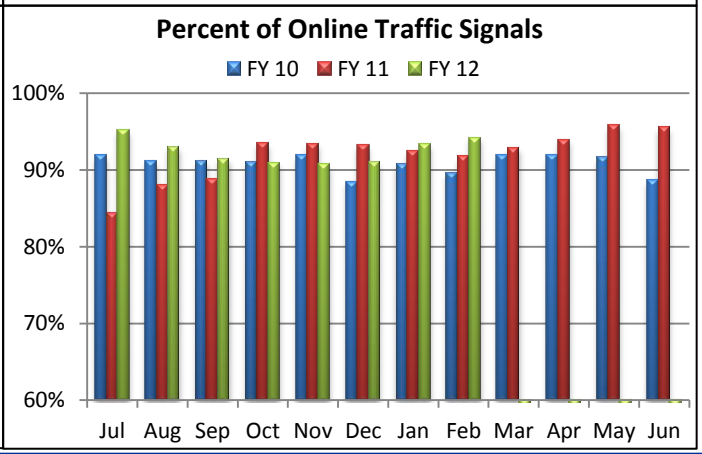

Percent of Operational TMS
FY 10
FY 11
FY 12
100%
90%
80%
70%
60%
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun

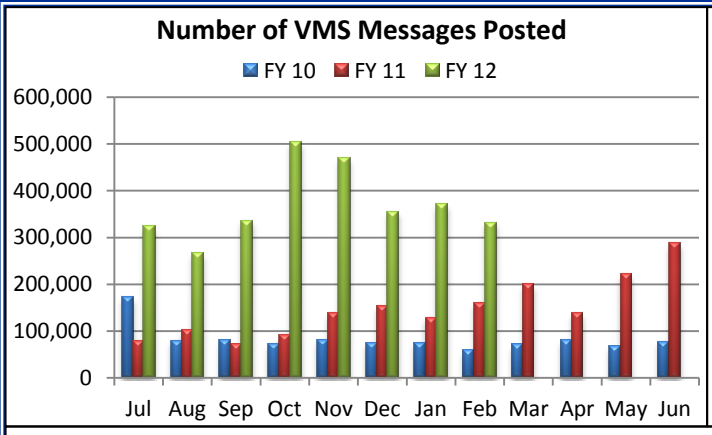

Percent of All Operational CCTV
FY10
FY11
FY12
100%
90%
80%
70%
60%
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun

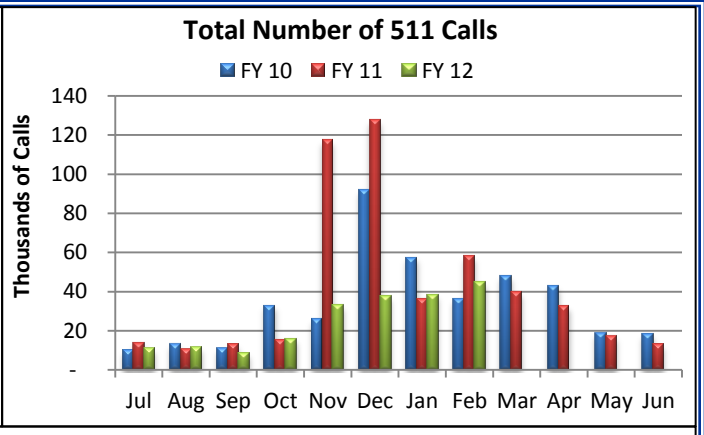

Percent of Operational RWIS
FY 10
FY 11
FY 12
100%
90%
80%
70%
60%
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun

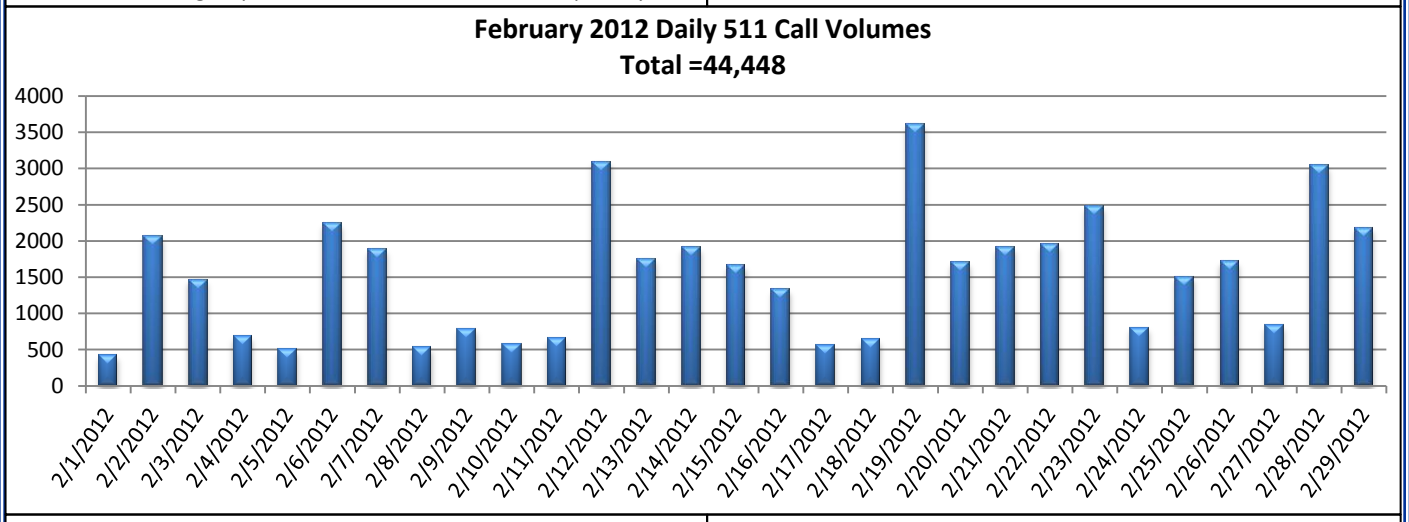

Percent of Operational HAR Units and HAR Advisory Signs
FY 10
FY 11
FY 12
100%
80%
60%
40%
20%
0%
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun

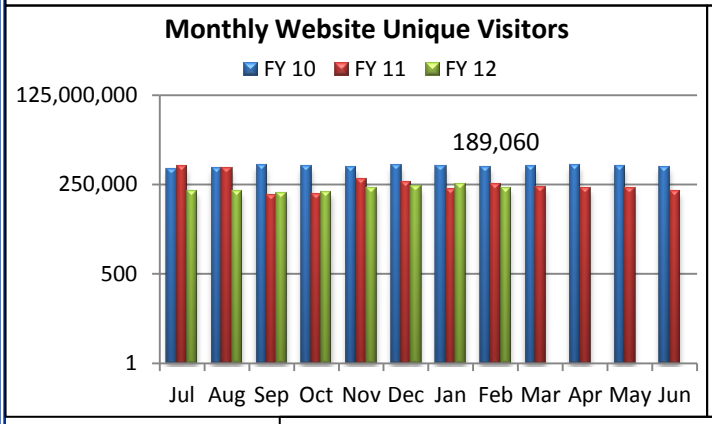

Percent of Operational VMS
FY 10
FY 11
FY 12
100%
90%
80%
70%
60%
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun

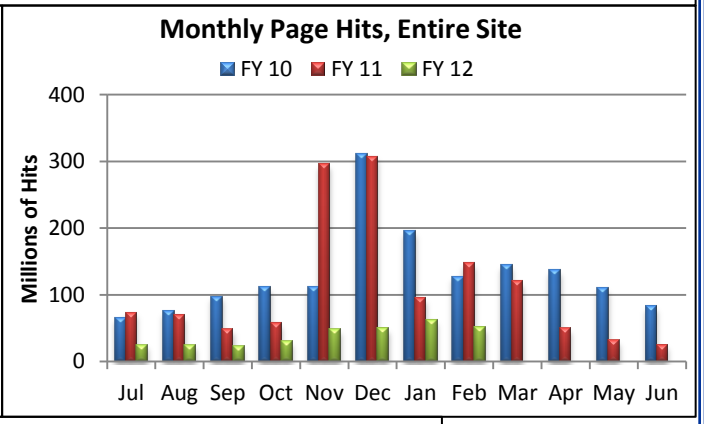

Percent of Online Traffic Signals
FY 10
FY 11
FY 12
100%
90%
80%
70%
60%
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun

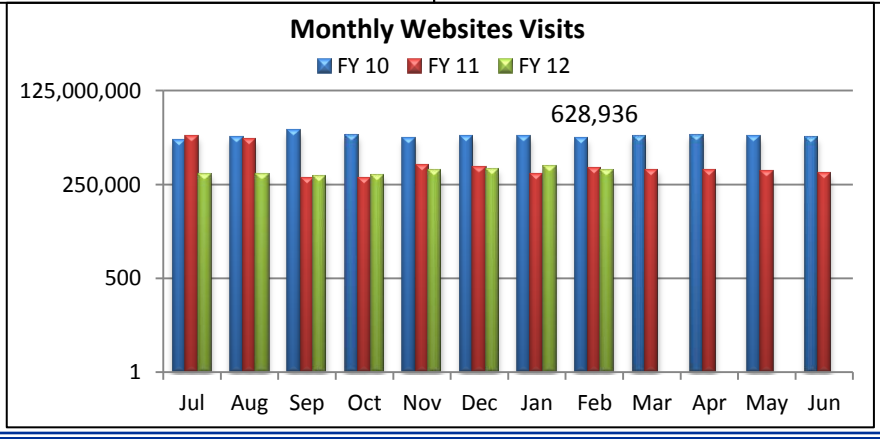

Number of VMS Messages Posted
FY 10
FY 11
FY 12
600,000
500,000
400,000
300,000
200,000
100,000
0
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun

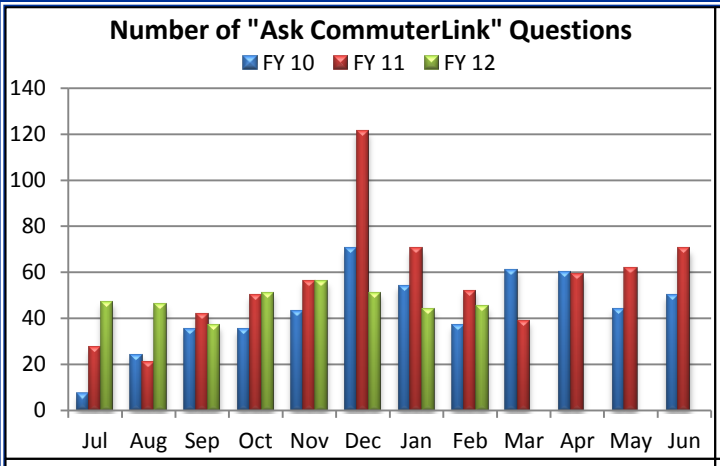

Total Number of 511 Calls
FY 10
FY 11
FY 12
Thousands of Calls
140
120
100
80
60
40
20
-
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun

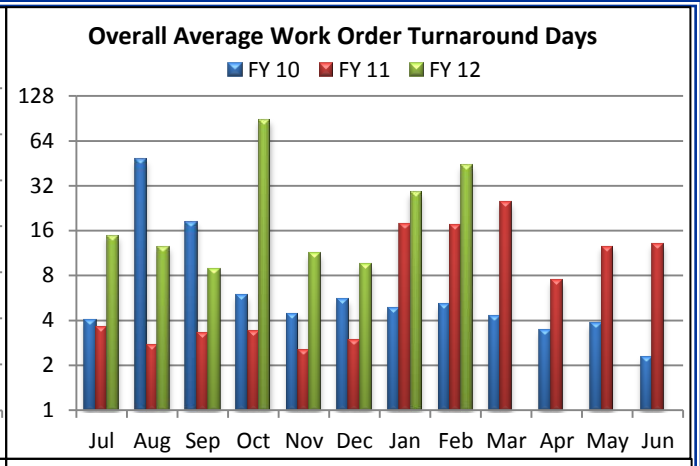

February 2012 Daily 511 Call Volumes
Total =44,448
4000
3500
3000
2500
2000
1500
1000
500
0
2/1/2012
2/2/2012
2/3/2012
2/4/2012
2/5/2012
2/6/2012
2/7/2012
2/8/2012
2/9/2012
2/10/2012
2/11/2012
2/12/2012
2/13/2012
2/14/2012
2/15/2012
2/16/2012
2/17/2012
2/18/2012
2/19/2012
2/20/2012
2/21/2012
2/22/2012
2/23/2012
2/24/2012
2/25/2012
2/26/2012
2/27/2012
2/28/2012
2/29/2012

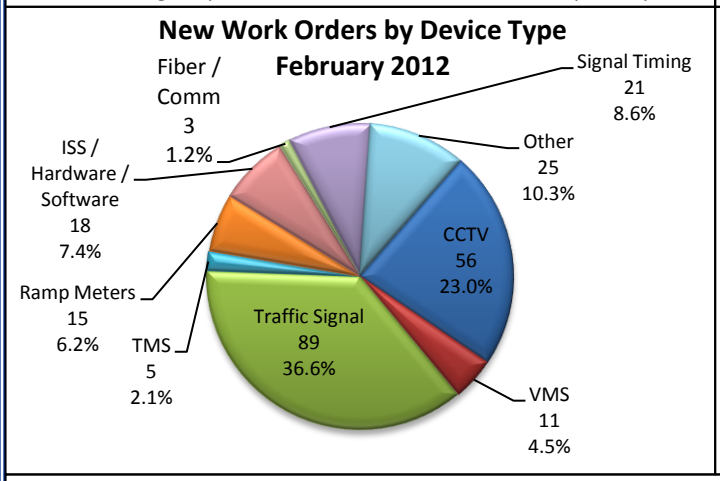

Monthly Website Unique Visitors
FY 10
FY 11
FY 12
125,000,000
250,000
500
1
189,060
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun

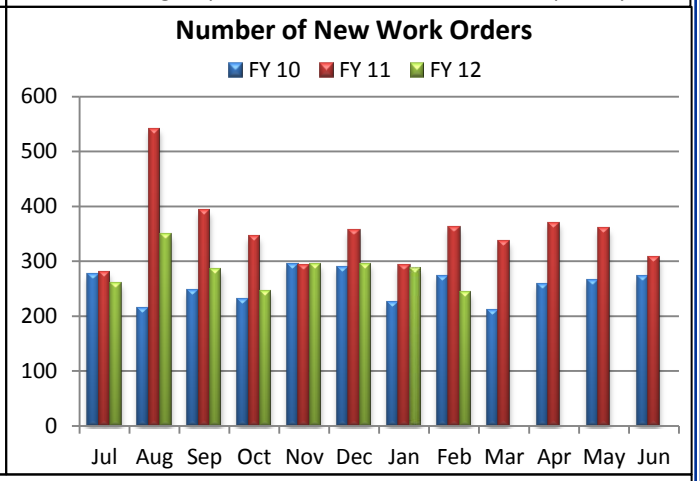

Monthly Page Hits, Entire Site
FY 10
FY 11
FY 12
Millions of Hits
400
300
200
100
0
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun


Monthly Websites Visits
FY 10
FY 11
FY 12
125,000,000
250,000
500
1
628,936
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun

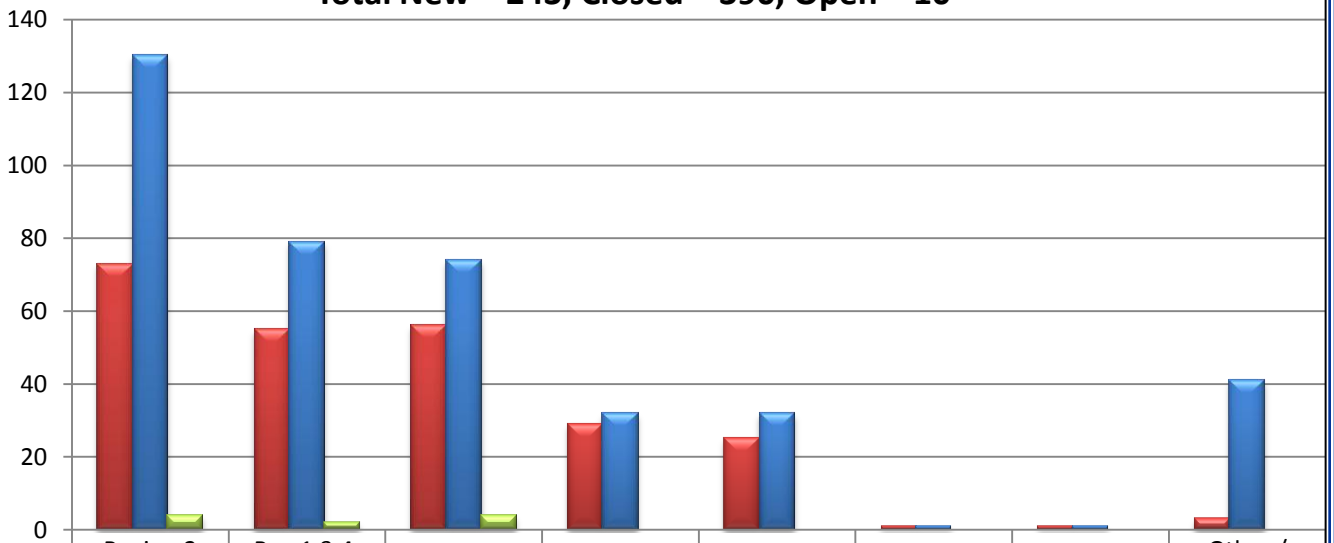








Work Order Statistics by Group - February 2012
Total New = 243, Closed = 390, Open = 10



	Region 2 Signal Maintenance	Reg 1,3,4, SLC, SLCo, Projects	ATMS	ISS	Signal Timing	TMS / Travel Time Mgmt	Deployment	Other / Engineering / Contractor
New	73	55	56	29	25	1	1	3
Closed	130	79	74	32	32	1	1	41
Open	4	2	4	0	0	0	0	0